REMARKS

Claims 1-22 and 24-26 are pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Section 103(a) Rejections:

The Final Action rejected claims 1-2, 8-9, 15-16, 21 and 24-26 under 35 U.S.C. § 103(a) as being unpatentable over Pudipeddi, et al. (U.S. Patent Application Publication No. 2004/0002942) (hereinafter, "Pudipeddi") in view of Arai et al. (U.S. Patent Application Publication No. 2001/0025311) (hereinafter, "Arai") and further in view of Patel et al. (U.S. Patent Application Publication No. 2004/0059866) (hereinafter, "Patel"). The Final Action also rejected claims 3-4, 10-11 and 17-18 under 35 U.S.C. § 103(a) as being unpatentable over Pudipeddi, Arai and Patel, further in view of Santry et al. ("Deciding when to forget in the Elephant file system") (hereinafter, "Santry"), 5-6, 12-13, 19 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Pudipeddi, Arai and Patel, further in view of Richard et al. (U.S. Patent Application Publication No. 2005/0015461) (hereinafter, "Richard"), and claims 7, 14 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Pudipeddi, Arai and Patel, further in view of Reynolds et al. (U.S. Patent No. 6,286,013) (hereinafter, "Reynolds"). Applicants traverse these rejections and submit that the pending claims are distinguishable over the cited references for at least the following reasons.

Regarding claim 1, none of the cited references teach or suggest, individually or in any combination, a system comprising a storage device configured to provide a storage space for data storage; and a file system configured to map a plurality of files and a plurality of named streams corresponding respectively to the files to the storage space for storage and to manage access to the storage device, wherein the named streams are configured to store metadata corresponding respectively to the files, and wherein the file system is configured to: detect an operation to modify an identity of a first one of the files, and in response to detecting the operation, store a record of the operation within a

respective one of the named streams corresponding to the first file, wherein the record includes a signature corresponding to the first file.

In rejecting claim 1, the Examiner relies on Pudipeddi to disclose the claim element of a file system configured to map files and corresponding named streams to a storage space of a storage device, where the named streams are configured to store metadata corresponding respectively to the files. Applicants note that nowhere within Pudipeddi are named streams described as storing metadata corresponding to files. Rather, Pudipeddi describes named streams as being components of files, presumably for storage of the file content itself rather than metadata corresponding to the file: "A file may be composed of one or more data streams of which the primary data stream is unnamed." (para. 38, emphasis added) Claim 1 recites named streams not as something included within files as constituents of those files, but as separate entities having a correspondence to stored files and storing metadata corresponding to those files.

The Examiner acknowledges that Pudipeddi does not store a record of an operation to modify an identity of a first file where the record includes a signature corresponding to the first file, and relies upon Arai to disclose this feature. However, Arai does not do so. Arai is generally directed to a scheme for preventing accesses to files dependent upon the signature of the program generating the access, not on the signature of the file that is accessed. In Figure 2 and at paragraphs 42-45, Arai describes a policy file 200 that is used to denote files to which access should be restricted, and how access should be restricted. Specifically, policy file 200 includes a number of entries 210-212 corresponding to named objects such as files or directories. Policy file 200 provides for the specification of access types that are prohibited for a particular object, with certain programs specified as exceptions. The programs that are specified as exception are given by file name (exception subject 204) and the hash value of the program file (program hash value 205). Arai describes the contents of policy file 200 as something that "should be configured by the security administrator of the system," (para. 44), that is, as an administrative configuration parameter rather than content generated during system operation.

In Figures 8 and 9 and at paragraphs 56-64, Arai describes one instance of how the program hash value 205 of policy file 200 is used. Specifically, Arai describes how a program attempting to access a particular file is filtered according to the elements of policy file 200 corresponding to the requested file. As described at paragraph 61, if the indicated program hash value 205 is nonzero, the hash value for the program file requesting access to the particular file is computed and compared to the program hash value 205 specified in policy file 200 for the particular file. If the hash values agree, the access operation proceeds, while if they do not agree, the request is registered within the access log shown in Figure 3.

However, these operations of Arai have nothing to do with the features recited in claim 1. They pertain to the characteristics of the program file of the program that is attempting to access a given file. By contrast, claim 1 recites that in response to detecting an operation to modify the identity of a first file, a file system is configured to store a record of the operation within a respective one of the named streams corresponding to the first file, wherein the record includes a signature corresponding to the first file. That is, in claim 1, the signature that appears in the record is the signature of the file that is the subject of the identity-change operation, not the signature of the program that requested the operation, as in Arai. Moreover, contrary to the Examiner's assertion, the access log file of Arai illustrated in Figure 3 does not include any file signature information at all, whether of the program attempting to access a file or of the accessed file itself. In sum, the system of Arai simply manages different information for different purposes than the system of claim 1.

The Examiner acknowledges that neither Pudipeddi nor Arai disclose storing a record of the identity change operation detected for a first file within a respective named stream corresponding to the first file, and relies on Patel to teach this feature. However, like Pudipeddi, Patel describes a data stream as a constituent component of a file, intended as a means for organizing file data contained within the file, not file metadata corresponding to the file. For example, at paragraph 34, Patel describes an example

embodiment in which a word processor document having multiple sections (a summary, index and main body) is divided up for storage among three different named streams. However, this corresponds to the storage of different portions of <u>file data</u> among the different named streams.

Patel does not disclose any aspect of storing <u>file metadata within named streams</u>. At paragraph 62, Patel does describe metadata attributes <u>of named streams themselves</u>. However, Patel does not disclose storage of these attributes within named streams, but rather within <u>completely distinct inode structures</u> (e.g., inodes 1000, 2000 and 6000 shown in Figure 8). Thus, Patel fails to disclose the storage of file metadata or any other type of metadata within named streams, as required by Applicants' claim 1.

Applicants note that the features of claim 1 that are absent from Pudipeddi, Arai and Patel are also absent from the other cited references. Since these references fail to teach or suggest all of the limitations of claim 1 as recited, Applicants submit that claim 1 is patentably distinguishable, as are independent claims 8 and 15 having limitations similar to claim 1.

Regarding claim 21, the cited references fail to teach or suggest, either individually or in any combination, a system comprising: a storage device configured to provide a storage space for data storage; and a file system configured to map a plurality of files and a plurality of named streams corresponding respectively to the files to the storage space for storage and to manage access to the storage device, wherein the named streams are configured to store metadata corresponding respectively to the files, and wherein the file system is further configured to: detect an identity-modifying file operation specifying one or more source ones of the plurality of files and a destination one of the plurality of files; and <u>in response to detecting the identity-modifying file operation, store a record of the identity-modifying file operation within the respective named stream corresponding to the destination file, and for existing records of operations previously detected by the file system and responsively stored within the respective</u>

named streams corresponding to the one or more source files, store at least some of the existing records within the respective named stream corresponding to the destination file.

In a manner similar to claim 1, the Examiner relies on Pudipeddi to disclose a file system configured to map files and named streams to a storage device, and on Arai to disclose storing a record of an identity-modifying operation. Applicants arguments above with respect to similar limitations of claim 1 apply with equal force to claim 21. The Examiner acknowledges that these references do not disclose storing a record of an identity-modifying file operation within a respective named stream corresponding to a destination file, and for existing records of operations previously detected by the file system and responsively stored within the respective named streams corresponding to the one or more source files, storing at least some of the existing records within the respective named stream corresponding to the destination file.

The Examiner relies upon Patel to disclose this limitation, asserting that Patel discloses "read and write operations on a named stream." However, Applicants note that claim 21 does not merely disclose reading and writing on a named stream, but the specific manipulation of metadata records of operations with respect to both source and destination files. As argued above, Patel does not disclose any aspect of storing file metadata, rather than file data, within named streams. Further, Patel does not disclose any aspect of the sort of selective storing of records of previously-detected operations on a source file within a named stream corresponding to a destination file that is recited in claim 21. Thus, for at least the foregoing reasons, Applicants submit that claim 21 is patentably distinguishable.

Applicants further note that numerous ones of the dependent claims recite additional distinctions over the cited references. However, as the independent claims have been shown to be distinguishable, further discussion of the dependent claims is unnecessary at this time.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicant hereby petitions for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5760-16300/BNK.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Request for Approval of Drawing Changes

☐ Notice of Change of Address

☐ Marked-up Copy of Amended Claims

☐ Marked-up Copy of Amended Paragraphs

☐ Fee Authorization Form authorizing a deposit account debit in the amount of $ for fees (   ).

☐ Other:

Respectfully submitted,

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Date: ___1 - 29-07___